

NOMENCLATURAL COMBINATIONS IN *SCHIZACHYRIUM* (POACEAE:
ANDROPOGONEAE)

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ABSTRACT

The following nomenclatural combinations in the Poaceae are proposed:
Schizachyrium spadiceum (J. Swallen) *comb. nov.*; and
Schizachyrium scoparium (A. Michaux) G. Nash var. *stoloniferum* (G.
Nash) *comb. et stat. nov.*

KEY WORDS: *Schizachyrium*, *Schizachyrium scoparium*, *Schizachyrium
scoparium* var. *stoloniferum*, *Schizachyrium spadiceum*, *Schizachyrium
stoloniferum*, nomenclature, Poaceae

Schizachyrium spadiceum (J. Swallen) J. Wipff, *comb. nov.* BASIONYM:
Andropogon spadiceus J. Swallen, Proceedings of the Biological Society of
Washington 56:82 (1943). TYPE: MEXICO. Coahuila: Cañon de Madera,
western side of Sierra de los Guajes, about 4 km east of Rancho Buena Vista, 7
Sept 1941, Robert M. Stewart 1504 (HOLOTYPE: US, accession #154691).

Schizachyrium spadiceum, restricted to Coahuila, México and Brewster County,
Texas, is the first reported species of *Schizachyrium* with a panicle of paired branches.
All of the other reported species of *Schizachyrium* have spicate racemes. This should
not be surprising since there are species of *Andropogon* that have spicate racemes
(e.g., *A. textilis* A. Rendle, *A. fastigiatus* O. Swartz, and *A. gracilis* K. Sprengel),
and there are also species that may have either spicate racemes or panicles of paired
branches (e.g., *A. urbanianus* A. Hitchcock, *A. reedii* A. Hitchcock & E. Ekman, and
A. kelleri E. Hackel). It appears that too much significance has been placed on the
condition of spicate racemes vs. panicles of primary branches; more reliable characters
can be found in the lower glume of the sessile spikelet, the internodes of the central
axis, and the pedicels (Clayton 1964). Clayton (1964) pointed out that the significance
attached to spicate racemes probably arose from the value of this character in
segregating *Schizachyrium* Nees von Esenbeck. Excluding the panicles of paired
branches, *S. spadiceum* possesses all of the below mentioned generic characters that

are used to delimit *Schizachyrium* from *Andropogon* and justify its placement into *Schizachyrium*.

Schizachyrium is most closely related to *Andropogon* sect. *Leptopogon* (Clayton 1964; Clayton & Renvoize 1986). Clayton (1964) and Clayton & Renvoize (1986) provided the following characters to delimit *Schizachyrium* and *Andropogon* sect. *Leptopogon*, with the inflorescence character being amended to accommodate *Schizachyrium spadiceum*.

Schizachyrium: Inflorescence a spicate raceme or panicle of paired branches (i.e., *S. spadiceum*); first glume of sessile spikelet convex on the back with several intercarinal veins; internodes and pedicels clavate to linear (but then often widening at the tip); the apex of the internode usually conspicuously cup-shaped with a fimbriate rim; upper lemma bilobed or deeply cleft almost to the base.

Andropogon sect. *Leptopogon*: Inflorescence a panicle of 2-several digitate branches or a spicate raceme (e.g., *A. gracilis* K. Sprengel); first glume concave; intercarinal area membranous, hyaline or translucent, and veinless between the keels, or rarely with 1-2 veins in the translucent or hyaline, concave, intercarinal area [e.g., *A. tenarius* A. Michaux (variable, veins present or absent)]; internodes and pedicels linear to filiform; the apex of the internode shallowly cup-shaped; upper lemma bifid up to 1/4 of its length, very rarely more, but never beyond the middle.

The following description of *Schizachyrium spadiceum* has been expanded from Swallen (1943).

Plants perennial, 60-95 cm tall, caespitose, without rhizomes or stolons, **culm** erect, terete, glabrous. **Leaves** glaucous. **Sheaths** compressed, keeled, scaberulous (glabrous), occasionally with a few scattered trichomes; the lower sheaths longer than the internodes and the upper shorter than the internodes. **Ligule** 1.0-1.5 mm long, a membrane, truncate, erose-ciliate. **Blade** 10-25 cm long, 2.0-2.5 mm wide, flat or folded, scaberulous, young blades ciliate in lower portion with trichomes 4-7 mm long, these often being lost in age. **Inflorescence** a panicle of paired branches, **branches** 3.5-6.0 cm long, 7-10 nodes; inflorescence exerted or partially enclosed in sheath; **sheath** (subtending inflorescence) 5.3-8.6 cm long; **blade** 0.5-39.5 mm long; **peduncle** 4.6-9.0 cm long. **Internode** (of inflorescence branch) 4.0-6.3 mm long; linear becoming wider, slightly swollen, at the apex; apex conspicuously cup-shaped with a fimbriate rim; lower 1/3-1/2 of internode and pedicel ciliate, but upper portion, abaxially, densely white villous with trichomes 4-7 mm long; internodes straight, without a membranous, hyaline or translucent, median groove. **Sessile spikelet** 7-8 mm long, golden to chestnut brown and the apex usually green; callus of white trichomes to 2 mm long. **First glume** 7-8 mm long; 7-11 veins, (4-)5-7 equidistant intercarinal veins, green; coriaceous, dorsally compressed, two-keeled, back of glume convex, glabrous, smooth, scaberulous on keels and veins in the upper portion; margins variously ciliate. **Second glume** 6.5-7.0 mm long, 3-veined (lateral veins obscure, sometimes only faintly visible in the upper 1/2); subcoriaceous, laterally compressed, enclosing florets; glabrous except for ciliate margins and scaberulous mid-vein at apex. **First lemma** 4.8-5.8 mm long, veinless, hyaline membrane; glabrous, margins ciliate; awnless; neuter. **Second lemma** 4.1-5.0 mm long, 3-veined; veined portion of lemma, in the center, chartaceous and the rest of the lemma a hyaline membrane, margins variously ciliate; apex cleft 1/3-1/2 of lemma, **teeth** 1.7-

2.3 mm long, awned between cleft; **awn** 14.2-17.2 mm long, once geniculate, tightly twisted below the bend, lower segment 5-6 mm long, terminal segment straight, 8.7-11.2 mm long. **Second palea** 1.7-2.0 mm long, veinless; hyaline membrane, margins ciliate. **Anther** 1.9-2.3 mm long; 3 stamens. **Caryopsis** 2.6-3.2 mm long, 0.70-0.75 mm wide; dark reddish purple. **Pedicelled spikelet** 0.8-4.0 mm long, neuter, greatly reduced, with only a first glume developed, awnless; **pedicel** 5-6 mm long; basal callus of trichomes to 2 mm long; lower 1/3-1/2 (2/3) ciliate, upper portion, abaxially, densely white villous with trichomes 4-7 mm long; without a membranous, hyaline or translucent, median groove. **Chromosome number** unknown.

Johnston (1981) commented that in the field *Schizachyrium spadiceum* has a strong superficial resemblance to *Schizachyrium scoparium* (A. Michaux) G. Nash.

Schizachyrium scoparium (A. Michaux) G. Nash var. ***stoloniferum*** (G. Nash) J. Wipff, *comb. et stat. nov.* BASIONYM: *Schizachyrium stoloniferum* G. Nash in J.K. Small, *Flora of the Southeastern U.S.* 59, 1326 (1903). *Andropogon stolonifer* (G. Nash) A. Hitchcock, *American Journal of Botany* 2:299 (1915). *Schizachyrium stoloniferum* G. Nash var. *stoloniferum* [autonym created by *Schizachyrium stoloniferum* G. Nash var. *wolfei* H. DeSelm, *Sida* 6(2):114-115 (1975)]. TYPE: UNITED STATES. Florida: *Chapman* (HOLOTYPE: NY). *Schizachyrium stoloniferum* G. Nash var. *wolfei* H. DeSelm, *Sida* 6(2):114-115 (1975). TYPE: UNITED STATES. Florida: Osceola Co.; Four miles northwest of Loughman, 14 October 1960, *Ray, Lakela, & Patman 10494* (HOLOTYPE: USF).

Chase (1951) reported that *Schizachyrium stoloniferum* resembled *S. scoparium* and from examining her descriptions of the two taxa the only significant difference between the two taxa was the presence of creeping scaly rhizomes in *S. stoloniferum*. In a systematic study of the *S. scoparium* complex, Bruner (1987) concluded that *S. stoloniferum* was conspecific with *S. scoparium* and should be recognized at the varietal level. However, he also considered *Andropogon scoparius* A. Michaux var. *polycladus* F. Lamson-Scribner & C. Ball as conspecific with *S. stoloniferum* and proposed a new combination: *S. scoparium* var. *polycladus* (F. Lamson-Scribner & C. Ball) J. Bruner, *ined.* and treated *S. stoloniferum* as a synonym. However, this new combination was validly published by Reed (1987), but it was probably in the sense of Fernald (1950) and not including *S. stoloniferum*, because the combinations in Reed (1987) were made in preparation for the *Flora of Central Eastern United States* (Maryland, Delaware, Virginia, and West Virginia) and *S. stoloniferum* is restricted to Florida, and southern Georgia and Alabama.

Bruner (1987) treated, without any specific explanation, *Andropogon scoparius* var. *polycladus* as conspecific with *Schizachyrium stoloniferum*, whereas Nash (1912), Hitchcock (1935), Chase (1951), and Gandhi (1989) treated var. *polycladus* as a synonym of *Schizachyrium* (*Andropogon*) *scoparium* (= *Schizachyrium scoparium* var. *scoparium*). Nash (1912), Hitchcock (1935), Fernald (1950), Chase (1951), and Gandhi (1989) characterized var. *polycladus* as non-rhizomatous, whereas Bruner (1987) considered it rhizomatous. After examining photographs of the type specimens of var. *polycladus* and *S. stoloniferum* I agree with Gandhi (1989) that the type specimen of var. *polycladus* does not possess rhizomes, whereas the type

of *S. stoloniferum* does have rhizomes. Lamson-Scribner & Ball (1901) in their original description of var. *polycladus* never mention this taxon as having rhizomes. The following is the original description by Lamson-Scribner & Ball (1901) for var. *polycladus*: "Stout, 9 to 12 dm. high, glabrous, somewhat glaucous; panicles large, much branched".

Another difference between Bruner (1987), and Lamson-Scribner & Ball (1901), Nash (1912), Hitchcock (1935), Fernald (1950), Chase (1951), and Gandhi (1989), is in the reported distributions of these taxa. Bruner (1987) commented that *Schizachyrium stoloniferum* is "... ecologically restricted to specific habitats in the southeastern United States and spatially isolated from the rest of *S. scoparium*, ...". Bruner reports the distribution of *S. stoloniferum* (including var. *polycladus*) as occurring throughout Florida, and southern Georgia and Alabama, on the sandy soils of woodland openings and roadsides. However, he does not report *S. scoparium* var. *scoparium* as occurring in Florida. Therefore, if *S. scoparium* var. *scoparium* is not recognized as occurring in Florida, and since the type for var. *polycladus* was collected in Manatee County, Florida, it is understandable why Bruner treated this taxon as conspecific with *S. stoloniferum*. Nash (1912), Hitchcock (1935), Fernald (1950), Chase (1951), and Gandhi (1989) all report *S. scoparium* (= var. *scoparium*) as occurring in Florida. Bruner (1987) not only reports different distributions for *S. scoparium* var. *scoparium*, but also greatly restricts the distribution of var. *polycladus* from what has been reported.

Fernald (1950), recognizing var. *polycladus* as a distinct variety of *Andropogon scoparius*, reported its distribution as occurring in dry woods from Texas to Florida and México, north to New Jersey through eastern Missouri and Pennsylvania. Lamson-Scribner & Ball (1901) give the following additional distributions for var. *polycladus*, "Tracy's No. 5330, from Biloxi, Mississippi, and a plant collected by John K. Small on the slopes and summit of Stone Mountain, Georgia, September 6-12, 1894, belong here." Stone Mountain is a granite dome located in northwestern Georgia, east of Atlanta.

No data were found supporting the treatment of *Andropogon scoparius* var. *polycladus* and *Schizachyrium stoloniferum* as conspecific (Bruner 1987), therefore I am treating var. *polycladus* as a synonym of *S. scoparium* var. *scoparium* as did Nash (1912), Hitchcock (1935), Chase (1951), and Gandhi (1989). However, I do not agree with Gandhi (1989) in the placement of *S. stoloniferum* as a synonym of *S. scoparium* var. *littorale* (G. Nash) F. Gould.

Schizachyrium scoparium var. *stoloniferum* and *S. scoparium* var. *littorale* occupy different habitats and have different growth habits. *Schizachyrium scoparium* var. *stoloniferum* is found in sandy woodlands and roadsides, whereas *S. scoparium* var. *littorale* grows on the shifting, coastal sands. *Schizachyrium scoparium* var. *stoloniferum* is strongly rhizomatous, whereas, *S. scoparium* var. *littorale*, as Bruner (1987) also reported, is not rhizomatous. *Schizachyrium scoparium* var. *littorale* only appears rhizomatous due to the continual burial of the culms and the subsequent decay of the sheath and blades from the culms. This results in the buried culms superficially resembling rhizomes. It is my opinion that *S. scoparium* var. *littorale* and *S. scoparium* var. *stoloniferum* represent two different and recognizable taxa.

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